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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/685,615

10/16/2003

Yuri Goldstein

PCTEL-022

5098

36822 7590 06/29/2007

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EXAMINER

MURPHY, RHONDA L

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

06/29/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/685,615	Applicant(s) GOLDSTEIN ET AL.	
	Examiner Rhonda Murphy	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-125 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,37-39,43-45,81,85,86,121-123 and 125 is/are rejected.
- 7) ☒ Claim(s) 3-36,40-42,46-80,82-84,87-120 and 124 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/19/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 56 and 69 are objected to because of the following informalities:
 2. Claim 56 is dependent upon claim 5. Examiner is questioning whether this dependency is correct.
 3. Claim 69 has been duplicated and should be corrected to read claim 68.
- Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 37 - 39, 43 – 45, 81, 85, 86 and 121-123 are rejected under 35 U.S.C. 102(e) as being anticipated by Saunders et al. (US 2004/0142696 A1).

Regarding claims 1 and 44, Saunders teaches an orthogonal frequency division multiplexing (OFDM) multipoint-to-point multicarrier wireless telecommunications system, comprising: a hub (Fig. 1; master transceiver 10) including a hub receiver (Fig. 2; section 200) and a hub transmitter (section 100); and a plurality of nodes (Fig. 1; remote site transceivers 12) each having a node receiver (Fig. 2; section 200) and a

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node transmitter (section 100), each said node transmitter for transmitting data over a unique group of carriers at the same time (page 6, paragraph 80), wherein said hub receiver is adapted to receive said data from each of said node transmitters (page 6, paragraph 80) and said hub is adapted to use said data to derive a frequency offset estimation for each node transmitter and to send an indication of each said frequency offset estimation to said nodes (pages 11-12, paragraphs 128, 132 and 139; via tickler tones), and said node receivers are adapted to receive said indication, and said node is adapted to modify data for transmission based at least partially on said indication (pages 12-13, paragraphs 140-141).

Regarding claims 2 and 45, Saunders teaches a system according to claims 1 and 44, wherein: said hub includes a fast Fourier transform (FFT) which converts data transmitted by said node transmitters over said carriers and received by said hub receiver into a frequency domain, and said frequency offset estimation is conducted in said frequency domain (page 4, paragraph 32; page 9, paragraphs 107).

Regarding claim 37, Saunders teaches a system according to claim 1, wherein: a first of said plurality of nodes utilizes a group of carriers including a first plurality of carriers (illustrated in Fig. 2 as the channel between master site transceiver 10 and remote site transceiver 12) and a second of said plurality of nodes utilizes a group of carrier including a second plurality of carriers different than said first plurality of carriers (illustrated in Fig. 2 as the channel between master site transceiver 10 and remote site transceiver 12).

Regarding claim 38, Saunders teaches a system according to claim 1, wherein: a first of said plurality of nodes utilizes a group of carriers including a single carrier and a second of said plurality of nodes utilizes a group of carrier including a plurality of carriers different than said single carrier (illustrated in Fig. 2 as the channel between master site transceiver 10 and remote site transceiver 12).

Regarding claim 39, Saunders teaches a system according to claim 1, wherein: each said node includes an inverse fast Fourier transformer (IFFT) and a signal correction means coupled to said IFFT for frequency offset compensation of data signals applied to and processed by said IFFT (page 9, paragraph 107).

Regarding claim 43, Saunders teaches a system according to claim 1, wherein: said OFDM system is a time division multiplexed system where at least two of said plurality of nodes transmit on at least one same carrier for transmission but at different times (page 3, paragraph 23; page 6, paragraph 80).

Regarding claim 81, Saunders teaches a node for an orthogonal frequency division multiplexing (OFDM) multipoint-to-point multicarrier wireless telecommunications system having a hub and a plurality of other nodes, the node comprising: a node receiver which receives a function of an indication of a frequency offset estimation from the hub (page 12-13, paragraphs 140-141), the hub having generated the indication of a frequency offset estimation for said node receiver as a function of data receiver from said node and from the plurality of other nodes (pages 11-12, paragraphs 128,132 and 139; via tickler tones); and a node transmitter for transmitting modulated corrected signals over at least one carrier (page 7, paragraph 88), said node transmitter having an

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inverse fast Fourier transformer (Fig. 2; IFFT 111), a signal correction (FEC 101) means coupled to said IFFT (see Fig. 2) for frequency offset compensation of data signals applied to and processed by said IFFT (pages 7-8 paragraphs 94-96), and a modulator (Fig. 2; 104) coupled to said signal correction means for modulating signals corrected by said signal correction means (page 8, paragraph 95).

Regarding claim 85, Saunders teaches a method for implementing frequency offset compensation in an orthogonal frequency division multiplexing (OFDM) multipoint-to-point multicarrier wireless telecommunications system having a hub (Fig. 1; master transceiver 10) and a plurality of nodes (remote site transceivers 12), where each respective node transmits data over a unique group of carriers at the same time as the other nodes, said method comprising: a) in the hub, estimating frequency offset in the frequency domain for each group of carriers (page 4, paragraph 32; page 9, paragraphs 107); b) transmitting frequency offset parameters for each group of carriers from the hub to the nodes (pages 11 and 12, paragraphs 132 and 139; via tickler tones); and c) in each node transmitter using said frequency offset parameters to implement frequency offset compensation in the time domain (page 8, paragraph 97).

Regarding claim 86, Saunders teaches a method according to claim 85, wherein: said estimating frequency offset comprises utilizing a fast Fourier transform (FFT) to convert data transmitted by the node transmitters over the carriers and received by the hub into a frequency domain, and conducting said estimating in the frequency domain (page 4, paragraph 32; page 9, paragraphs 107).

Regarding claim 121, Saunders teaches a method according to claim 85, wherein: a first of said plurality of nodes utilizes a group of carriers including a first plurality of carriers (illustrated in Fig. 2 as the channel between master site transceiver 10 and remote site transceiver 12) and a second of said plurality of nodes utilizes a group of carrier including a second plurality of carriers different than said first plurality of carriers (illustrated in Fig. 2 as the channel between master site transceiver 10 and remote site transceiver 12).

Regarding claim 122, Saunders teaches a method according to claim 85, wherein: a first of said plurality of nodes utilizes a group of carriers including a single carrier and a second of said plurality of nodes utilizes a group of carrier including a plurality of carriers different than said single carrier (illustrated in Fig. 2 as the channel between master site transceiver 10 and remote site transceiver 12).

Regarding claim 123, Saunders teaches a method according to claim 85, wherein: said using said frequency offset parameters to implement frequency offset compensation in the time domain comprises utilizing an inverse fast Fourier transformer (IFFT) and a signal correction means coupled to the IFFT in each node for frequency offset compensation of data signals applied to and processed by the FFT (Fig. 2; page 8, paragraph 97).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 125 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saunders et al. (US 2004/0142696 A1).

Regarding claim 125, Saunders teaches a method according to claim 85 having at least a plurality of nodes (Fig. 1; remote transceivers 12).

Saunders fails to explicitly disclose at least two of the plurality of nodes transmitting on at least one same carrier for transmission but at different times.

However, it is known in the art for nodes to transmit on the same carrier at different times. Thus, it would have been obvious to one skilled in the art to modify Saunder's method to have at least two nodes transmit on the same carrier at different times, so as to utilize the same channel for communicating data at separate times.

Allowable Subject Matter

1. Claims 3-36, 40-42, 46-80, 82 – 84, 87-120 and 124 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Teo et al. (US 2006/0052139 A1)
- Jiang et al. (US 2004/0252229 A1)
- Olaker (US 2004/0216016 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 9:00 - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rhonda Murphy
Examiner
Art Unit 2616

RM

Daniel J. Ryman
Patent Examiner
AU 2616

A handwritten signature in black ink, appearing to read "Daniel Ryman".